REMARKS

This communication is considered fully responsive to the Office action mailed May 6, 2004. Claims 1-27 were examined and stand rejected. Claims 1, 8-10, 14-15, 20-21 are amended. No claims are cancelled. Claims 28-44 are added. Reexamination and reconsideration are requested.

Claim Rejections – 35 U.S.C. §103

Claims 1-3, 5-9, 11-13, 17, 19-24, 26 and 27 stand rejected under 35 U.S.C. §103(a) as being purportedly unpatentable over U.S. Patent No. 6,075,590 to Edgar ("Edgar") in further view of Edgar.

Generally, Edgar discloses an image processing method that generates two distinct scans of an image to correct a defect in a printed image (e.g., printed on film). A visible light scanning process generates a visible light scan of the image, which includes the image and the defect. An infrared light scanning process generates an infra red scan of the defect only, because printed image dyes pass infrared light. Edgar teaches that the two distinct scans of the image can be processed in combination to generate a version of the image that does not exhibit the defect. In a second embodiment of disclosed in Edgar, a blurring effect is introduced to a normalized version of the infra red scan.

Claim 1 has been amended to recite:

> 1. A method of removing an object from a digital image derived from digital image data, the method comprising:
>
> displaying the digital image;
>
> specifying a sub-region of the displayed digital image that contains at least a part of the object and another sub-region of the displayed digital image that does not contain the object;
>
> identifying the object to be removed by categorizing the digital image data in the sub-region that contains at least a part of the object into an object region and a non-object region; and
>
> modifying the digital image data of the object region to more closely resemble the digital image data of the non-object region; and
>
> combining noise into the modified digital image data of the object region.

Specifically, Edgar teaches generating two distinct image scans 702 and 704 using two distinct scanning operations of a single printed image and dividing each image scan into multiple overlapping blocks. Importantly, both scans of Edgar (as well as both blocks 706 and 708) include image data of the defect. The corresponding blocks of the two different scans are processed sequentially in Edgar's flow of FIG. 7, where each block undergoes a transform operation into the frequency domain.

These characteristics of Edgar are in contrast to claim 1, which recites specifying two sub-regions of a single displayed digital image, where one sub-region contains defect data and another sub-region contains no defect data. Edgar fails to disclose or suggest such sub-regions and particularly fails to disclose or suggest specifying sub-regions having such different characteristics pertaining to the presence or absence of defect data. Edgar, therefore, fails to anticipate or make obvious the invention recited in claim 1.

In addition, Edgar discloses introducing a blurring effect 1224 into a normalized version of the infra red scan 1208, but fails to disclose or suggest the claimed combining of noise into the modified digital image data of the object region. First, the blurring effect disclosed in Edgar is an averaging operation (not a noise operation) of a 9x9 pixel box around each pixel in the visible light scan. (col. 12, lines 57-64) and the normalized version of the infra red scan (col. 12, lines 65-67). Second, Edgar does not teach combining noise, or even averaging effects, into modified digital image data of an object region. In claim 1, the object region is recited as a categorized region of a specified sub-region of the displayed digital image, and the modified digital image data is recited as being modified to more closely resemble the digital image data of the non-object region. These recited features are not disclosed or suggested by Edgar.

The Office also asserts that it would be obvious to one of ordinary skill in the art to modify Edgar's embodiment of FIG. 7 with Edgar's embodiment of FIG. 12. The Applicant respectfully disputes this assertion. The image processing

of FIG. 7 is performed using blocks and is performed in the frequency transform space. In contrast, the image processing of FIG. 12 of Edgar operates on each of the entire image scans and processes the scans in linear space or gamma corrected space (as opposed to the frequency transform space). Edgar also blurs the full visible light scan 1202 and a normalized version of the infra red scan 1208 in linear or gamma corrected space. There is no suggestion in Edgar that blurring would provide any benefit in the frequency transform space. In fact, "blurring" in the frequency transform space would not achieve the desired effect of reducing artifacts in the gain calculation caused by linear space irregularities and noise in the image. (Col. 12, lines 60-62). Instead, the disclosed blurring, if performed in the frequency domain, would further corrupt the original image. Accordingly, the proposed combination of specified features of the embodiments of FIGs. 7 and 12 would not have been obvious to one of ordinary skill in the art and in fact would be known to be inoperable for achieving the desired results.

Claims 2-27 depend from claim 1, which is believed allowable. As such, claims 2-27 are believed allowable for at least the same reasons as claim 1, and the Applicant earnestly requests that claims 2-27 be allowed.

New Claims

Claims 28-44 have been added.

Claims 28-30 depend from or share similar features with claim 1, which is believed allowable. As such, claims 28-30 are believed allowable for at least the same reasons as claim 1, and the Applicant earnestly requests that claims 28-30 be allowed.

Claims 31-44 are believed to be allowable because the cited references do not disclose or suggest the recited features of these claims.

Conclusion

Based on the amendments and remarks herein, the Applicant respectfully requests prompt issuance of a notice of allowance for claims 1- 44 in this matter.

Respectfully Submitted,

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